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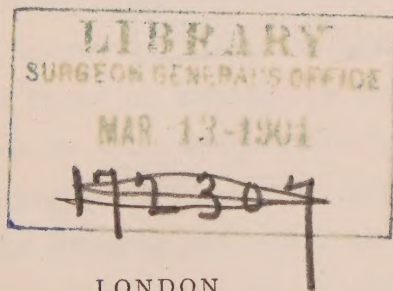
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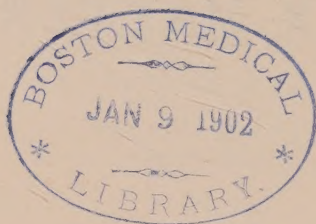
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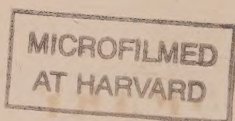
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PREFACE

THE papers given in this volume are of a somewhat mixed character. Some of them may seem better fitted for the pages of a Review, or of a daily or weekly paper. Several of them I tried to put before the public in this way, but with one exception they were declined, owing mainly, no doubt, to their controversial or rather their unconventional character. They all point out prevailing errors on sanitary or economic matters, or on both, which seriously affect the well-being of the community, and which, but for the strangely resistant force of conventionalism, could easily be set aside, and with much advantage to all.

The last three papers go mainly to confirm, very much from more recent observation, what the author has already brought forward as to the evils resulting from the long-standing system of over-stimulation, over-feeding, and drugging, both in health and disease.

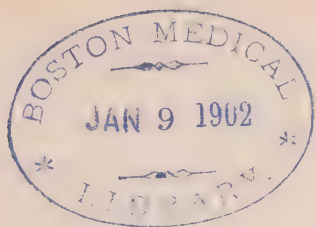
G. S. K.

CURRIE, MIDLOTHIAN,

September 1900.

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ON SANITARY & OTHER MATTERS

I

ON WASTE OF WATER IN WATER- CLOSETS AND BATHS

THE supply of water to our towns and villages is becoming every year a more difficult problem ; and if the drought which we are experiencing over many parts of the country should continue till the winter frosts set in, which is certainly possible, the results to health and to numerous industries where a large supply of water is necessary may be disastrous. (Written autumn 1898.)

The waste of water is known to be enormous, but no remedy has as yet been found short of stopping or restricting the supply.

The former can only be done as a last resort, and not until the water reserves are well-nigh exhausted; and with partial restriction the comparative waste seems to go on as before.

I have long held and given expression to the opinion that a large portion of the water used in accordance with our present habits may be saved, not only with no loss to the health or convenience of the community, but with much advantage to both.

Some years ago I asked the late engineer of the Edinburgh Water Trust what proportion of the water consumed in Edinburgh was, in his opinion, used for flushing the water-closets. His reply was, twenty per cent. Now this twenty per cent of water may be saved by using a small quantity of dry earth in an earth closet. The use of this is constantly met with in the country, as yet mostly in the smaller houses, where the husband looks after such matters. In the larger houses this is not considered by the

ladies to be a fit duty for the female servants, who are more fastidious now than they were fifty years ago. Where a gardener or other man-servant is kept there is no difficulty. In a town, large or small, there should be no difficulty whatever, as the Corporation can do all that is necessary, by a moderate addition to the ordinary staff of scavengers. The quantity of earth requisite is very much less than is usually supposed. The official who allowed that twenty per cent of the water used in a town went to the water-closets gravely said to me, that it would be impossible, in a large town like Edinburgh, to bring in so great a quantity of earth as would be wanted, and to carry the increased product away. I asked him how much earth he supposed would be necessary for a medium-sized family, say of six or seven. He considered a little, and then to my astonishment said he supposed about a ton a month. This is of course absurd, but it shows how little an expert on all things connected with water

supply may know about a matter certainly cognate to his business. He was, however, equally astonished when I told him that not from calculation, but from actual careful trial over a sufficient period, I had found that half a ton sufficed for a year. Half a pound a day per head is enough, and with this no more smell is felt than in an ordinary water-closet. In both there is some odour at the time the closet is used, but not more in the one case than in the other, and what there is is quite innocuous. I find that the usual weekly allowance of bread to a servant is four pounds, thus exceeding the amount of earth required for one person in the same time. On a large scale I would be inclined to arrange for double the above quantity ; but no one can say that an average of one ton a year of clean earth could not, with the greatest ease, be brought to each house of our largest towns. What is carried away is, of course, a larger quantity, but call it two tons, and there can be no possible difficulty here either.

The latter should have no smell whatever; certainly it may be considered pure compared with the filth with which Edinburgh, the town I know best, is polluting the air in the neighbouring country, and to which even the Government cannot legally put a stop, when it is deposited too near one of their soldiers' barracks.

The arrangements necessary for converting a water-closet into an earth-closet are of the simplest description. The pipe is cut and sealed under the old pan, which is removed, and a pail with a handle put in its place. The latter is the only article which costs anything, as to be more easily kept clean it should be enamelled, but any pail will do. A plain deal box to contain enough earth for a week may be made for the purpose, but there is in all houses an abundance of boxes, which are usually got rid of by burning. This and a small wooden spade or trowel completes the plant, and is absolutely all that is required. A self-acting

apparatus to spread the earth has been used, and highly recommended, but I may say I have seldom found it to act well for any length of time, and it is at best a needless superfluity ; as in everything else the simpler the means used, if sufficient, the better. In the country, to take my own case, the pail is lifted out every fourth day or so, and emptied in the garden on the soil nearest where it is to be used as manure. It sometimes makes a small heap if it is not wanted at once, but there is no smell or unpleasantness from it whatever, and no one would notice it unless he knew and looked for it. In Algiers, where I followed the same plan for nearly a year and a half, during one summer and two winters, the whole mass was left quite near the house, exposed to sun and rain, and I often said that one might at any time have smoothed the surface, put a tablecloth over it, and eaten his dinner without being aware of any odour whatever. This is not, I acknowledge, a nice statement to make, but

it certainly disposes of any possible objection that could be made on the score of health, or even of amenity. In India the dry earth system has long been in use; in the jails it has been universally adopted. Colonel Cadell, late Governor of the Andaman Islands, where are the great penal settlements of the Indian Government, tells me it is used there with perfect success, and with great advantage in the raising of vegetable foods. On one occasion he was showing Admiral Fremantle over his command, and on Viper Island he took him into a large long erection, and asked him for what purpose he would suppose it was used. The Admiral looked round, and seeing nothing but that on both sides all along the apartment the space near the wall was divided into narrow sections by wooden partitions three feet high, he said that perhaps some of the convicts got their food there. He was amused to hear that the apartment had been used that morning by five hundred

convicts as an earth-closet. Here the product, solid and fluid separately, was sent from time to time by boat to another island, where it was used as manure. In the Islands the rainy season lasts for more than half the year, and then the earth must be dried by heat. But in this country it is not necessary that the earth used should be dried by any artificial means. If too dry, indeed, it has seemed to me not to be so good a deodorant. If on a dry day, when there has been no rain for some days, the earth is removed to a shed, or to any place where the rain does not reach it, this is quite sufficient. I believe it is the humus in the soil more than the mineral matters which is the useful ingredient, and as it is mostly carbon, the reason of this is obvious. Dry ashes have been found to do very well instead of earth, and also the refuse of shale, the huge mounds of which disfigure the landscape near every oil-work in the country; it only requires to be ground down to a powder.

After the removal of all the solid excreta, and of a portion of the fluid, perhaps one-fourth, there remains still to be got rid of the other three-fourths of the latter, as well as all the soapy water from the bedrooms and laundry, and the dirty water from the scullery. In the country these also may be utilised to advantage, and at very little expense. Already on my premises a large portion of them went to the garden, and now, to suit the demands of the Water of Leith Purification Commissioners, the whole is sent there. Use is made of a tank or cesspool into which formerly all matters from the water-closets went, any overflow going into the neighbouring stream, and the solider portions being cleaned out once a year. By a slight change in the drains, everything except a portion of the surface water now goes into this cesspool, and by means of a pump reaches the garden where it is utilised as a liquid manure. Any occasional overflow goes into a loosely-constructed drain, whence it gets into the open

subsoil and disappears, but we hope that not much of it will escape in that useless fashion. In towns it would not be easy to dispose usefully of these subsidiary matters, but if all the solid part of the w.c. sewage with a considerable part of the liquid is at once rendered innocuous, and can be removed at leisure, it may be found in many cases that all the rest of the house sewage, with the water from the roof, baths, etc., may be left to pass freely, with no obstruction from traps, into the outside drains. This ideal drainage could at least be used in country houses where there is a free outlet to the sea or stream, and in small towns, where no chemical or other matters might lead to bad smells. In towns, of course, there must be other arrangements for utilising the solid matters, though in districts where villas predominate with a half or even a quarter-acre stance, the same mode may be adopted as in the country, and with much advantage. This, however, will probably not be done, and the

municipal authorities must arrange a general system for the whole community. I have not the knowledge sufficient for giving the details of such an arrangement, but any official who has to do with the removal of other town refuse could have no difficulty in doing so. The cost of the change from one method would be, as I have already shown, next to nothing.

From the economic side the water system compares very badly with the earth closet. Besides the huge loss in water, the value of the fertilising material lost to the soil is perhaps even greater. In his presidential address to the last meeting of the British Association at Bristol, Sir William Crookes puts the loss at sixteen millions sterling. In a paper on 'Dry Earth' in *Farm and Home* for February 29, 1896, I put it at a still higher figure, viz. twenty millions. This was based on a statement made to me by a medical friend long resident in China, where the land is absolutely dependent for its fer-

tility on house sewage. I asked him if Europeans resident there used the same means of ridding themselves of the matters in question as the natives did. His answer was most emphatic. "Of course we do," he said, "and we would be fools not to. Every person in my house was worth ten shillings a year to me." Lately I was told of an intelligent artizan near Montrose who puts the same value on each member of his household, using the material with excellent effect in his garden. I have the best evidence of the value of this material on a larger scale from the head gardeners at Dalkeith Palace and Mentmore, both of whom have used the dry earth system for many years.

But the valuable material thus lost is not done with when it is sent down the water-closet. It is only put out of sight. It loses its value at once, and is converted into a most costly nuisance. I need not dwell on loss of amenity of many of our streams and estuaries; nor on the money spent on

attempts to purify the sewage after it leaves the houses ; nor on the plumbers' bills for the construction and endless reconstruction of the apparatus within doors, and for excluding bad air from without : nor on the mere money spent on doctors' bills ; these are too well known to every householder, and the cost in money and worry is incalculable. But we must add the serious loss of life and deterioration of health which arise from the same causes. Some thirty years ago I tried honestly to appreciate what proportion of death and of ill-health in my practice in Edinburgh was due to bad air from defects in drainage, and I have very often spoken of it since that period. I could not make it below one-third of the whole. This may be too high an estimate, or it may be, if all could be known, too low, but the possibility of such an estimate being made must show that the matter is a most serious one. In the earlier years of my experience, the evils from water-closets were confined mostly to the towns ;

but gradually, as they were introduced into the large country houses, farmhouses, and manse, the same sort of cases were seen in invalids from the country, and, on the probable cause being pointed out and inquired into, the same errors and imperfections were found to exist in the country houses as in the towns, and often in the highest degree in the largest houses. I often visited, professionally and otherwise, in such houses, and in a very large proportion of them, where I had the means of ascertaining the facts, the sanitary conditions were very bad. A great deal of money has been spent in recent years both in town and country, and generally the inhabitants have been assured that perfect arrangements have at last been made. But the same assurances have been given before, and have by and by proved to be ill-founded. Something new and unexpected constantly turns up, and I have looked on perfection by our present methods as impossible. Even the houses of first-class engineers and

medical men are not exempted. To show my own feeling on this matter I may mention that with some difficulty I have managed to keep my own house unconnected with a huge pipe, constructed at an expense of some £400,000, which has been laid along six or seven miles of the adjoining stream, to carry all the sewage of the district and the polluted water from the mills to the sea. I willingly pay my share of the imposed tax in consideration of the improved amenity of the stream, but I objected most strenuously to have any connection whatever with the pipe and innumerable drains emptying into it, and, after some trouble, I am allowed to have my own way. All sewage matters are used up on the premises, and much to the satisfaction of my gardener, a very intelligent Scotchman. The contractor who made the slight changes necessary in the drains tells me that mine is the only place along the stream which is not included in the general system. A neighbouring doctor told me that he had spent

£80 on a somewhat complex arrangement for cutting off his house and stable from the common pipe. The risk is not from the sewage matters which run to the sea, but from the ascending bad air in the pipe. Air holes have been made at intervals to give ventilation, but the smell from these is so disgusting that several of them have had to be shut up, where near any road or path. One of these was within a hundred yards of my premises, and during two summers, before it was shut up, the smell was intolerable. As my place is above this it would have got the full benefit if any opening was made on my premises; and I know of no opening above me at all. There is a pretty steady rise of five hundred feet from the sea to the end of the pipe, and the foul air naturally seeks an outlet at every terminal point. There seems to be little or no movement of air in the pipe itself, even where the smell escapes. The only way I can see that a current of fresh air could be carried through

the main pipe is, that a communication be made from it with every mill chimney on the river. This I recommended to the head of one of the largest of the mills some time ago for his own safety, as his house is one of the highest in the district. It is not safe to prophesy, but I look for trouble by and by. We certainly have, at huge expense, brought on ourselves the risks which we have seen are so real in a large town under the present system, and that in a very aggravated form. The ventilation in the large sewers of a town is infinitely superior to that of a practically closed pipe, six or seven miles in length.

From a sanitary point of view the dry earth system is perfect, and has been found to be so both in cold and in hot climates. It is surely worth something to those who adopt it to know that their own families run no risks from foul gases, and that they cannot contaminate their neighbours. I have known in Edinburgh that the mischief from bad drainage in a house did not affect

the inhabitants of that house, where there were only old people, but those of the house next to it, where there were children. Had such diseases as scarlet fever or typhoid broken out in either house, their aggravation from bad air might have been disastrous. I had a very sad instance of this many years ago. A family took a house in the country for the summer. They were very healthy, and had long acted on my advice as to food, etc. The eldest son, a fine lad of eighteen, took scarlet fever a few days after leaving home. The only source of infection known was a letter from a fellow-student who was recovering from scarlet fever. In it he mentioned that as he was writing his fingers were peeling from exfoliation of the skin, and no doubt the paper he wrote on was infected. The case at once showed itself to be a bad one, and I went for several afternoons to see him with the local doctor. One day I found the father also very ill. He was a very healthy man, just in his

prime, and a member of a long-lived family. He had sat down to dinner in the middle of the day, but in the evening I found him in an absolutely hopeless condition, and he was dead when I returned next evening. I stopped the night with the son, who died next day. During the night I chanced to see the bath, and found abundant proof that it was not cut off from the outside drainage. There was no marked bad smell, but a heavy odour and an enormous quantity of small flies which first attracted my attention. Here was a sufficient cause for converting what should have been two mild cases into about the worst I have ever met with.

In the other form of waste of water to which I wish to draw attention, viz. an unnecessary quantity of it used in baths, it is more difficult to estimate the amount lost. But if we consider the large quantity necessary for an ordinary bath, which may be used daily by several individuals, and also that baths are now the rule, even in

small houses, the amount of water may equal that used in water-closets. Taking the individual, one who has his daily bath uses for it very much, perhaps ten times, more than is requisite for one flushing of the water-closet, and as in both operations there is abundant room for unnecessary waste, it may well be that between them they use up half the quantity of water consumed in a town ; but take it at a smaller figure, say one-third, and this, I believe, is ludicrously small, the cost to the community for water would, by a change of system, be enormously lessened. The dry earth closet requires no water ; what is required for washing out the enamelled pail is not worth mentioning, and the substitute I propose for the bath demands very little. This is a towel lightly wrung out of cold or tepid water, for which if used every day the water of one bath would more than suffice for a twelvemonth. This is a change which it is rather dangerous to speak of, the

morning tub or bath being so firmly established as to be looked on almost as a religious rite by the average Englishman. But it is more a luxury than a necessity, except to the strong and too-well-fed, on whom it acts as a 'pick-up,' as a dram does for the man who has indulged too freely over night, or the pipe before breakfast for one who abuses tobacco. The only point I made in a long conversation with the headmaster and teachers of a large public school (see *Plea*, p. 106) was on this very matter. It was conducted in a friendly spirit, but on my suggesting that a cold morning bath did not suit all boys, the Head fired up at once, and to clinch matters said that for himself he never felt right till after his cold bath. I replied that I felt all right in the morning, and had no need for anything to set me up. He thought for a minute, and then said, 'You have me there.' From the weakly, especially those of the nervous tempera-

ment, it takes out too much; and I have known many, young ladies especially, who have been greatly benefited by stopping it. When baths for the working classes were first spoken of, I ventured on the remark that to benefit by them it would be necessary, in the first place, to feed many for whom they were intended, and I have seen no reason to recall this judgment. Much money has been spent and often with very little advantage.

For the purpose of cleanliness a warm bath once a week, preferably at night, is sufficient for the delicate, and the change from what is considered a bracing cold bath every morning makes all the difference between good health and poor health to many; but for all a good rub with a towel wrung out of cold or tepid water as is most agreeable, every morning or occasionally, is perfectly sufficient. It cleans the skin better than a dip into cold water and a wipe with a towel. If the

water is used cold, and the process repeated as often as is agreeable, the bracing effect is quite equal to that of a cold tub or bath.

I am but too well aware that changes such as I indicate are so contrary to the current ideas of the day, and would interfere with so many vested interests, that so long as there is no necessity for some change few will take any interest in the matter. But the necessity may come any day—in some parts of the country it is upon us already—and, if the population of towns increases as it is doing, it must come sooner or later. If the simple methods of saving water which I have recommended be adopted, there will be left in the pockets of the public what, if paid into the nation's exchequer, would amply suffice to enable the imperial jingoes of the period to indulge annually in a great war, involving the loss of tens of thousands of our soldiers, and of tens of millions of our money.

II

ON THE MODERN SYSTEM OF TREAT- ING AND NURSING INFECTIOUS DISEASES.

INFECTIOUS diseases may be considered in two categories, those which it is possible to stamp out, and those in which, under present circumstances, this cannot be done. The best example of the former class is smallpox, which by a perfect system of vaccination may be, and in some communities or sections of communities has practically been stamped out, as in the Prussian army of the present day. Of the other class of diseases, although they may be kept out of a country where they have never yet been known, it has been found quite impracticable to prevent their breaking out afresh from time to time, the

foci of infection being so numerous, and capable of remaining latent for an indefinite period. This class comprises, amongst others, the common diseases of childhood, as scarlet fever, measles, and hooping-cough. I shall take scarlet fever as a typical representative, and confine my observations to it.

It may be safely taken as a fact that no one dreams of stamping out scarlet fever in an old country, or even of the possibility of keeping it out of any limited community or family; and the main object of the sanitary authority or physician must be how to arrange that the disease may give least trouble and expense to the public. Up to recent years each family was left to shift for itself, and the nursing was usually done by the healthy members. Now, every case of scarlet fever has to be notified to the proper authority by the doctor, who receives a moderate fee for his trouble. It is the duty of the sanitary inspector to visit the house, and, unless isolation can be done to his

satisfaction, to remove the patient to one of the hospitals now prepared all over the country for the reception of infectious diseases. The other members of the family are usually denied access to the sick one, who is under the care of a nurse, and is not permitted to leave till all risk of infecting others is supposed to be over. This new system cannot be carried out without considerable expense, and with no little annoyance to the patient and friends. The question I wish to consider is, whether this expense and trouble are necessary and serve the ends for which they are intended.

This question I will best answer by a short statement of my method of dealing with scarlet fever for the last fifteen or twenty years of my active professional life. When the disease got into a family, I advised—provided that I knew the house to be in a sanitary condition, that the children were healthy, and had been brought up properly as to food, etc.—that every facility

should be given for the spread of the disease over all who were liable to it. In almost every case where this advice was followed the others took the disease. In one case a daughter of the family would not take it, though she did her best to get it, sitting beside the others, handling and kissing them. Two years later she took it, no one knew how, when the family was in the country for the summer, and she caused more inconvenience than did all the others. I never had occasion to regret following this method, and I often got thanks from the parents for saving them from much subsequent trouble and anxiety. In a few cases I knew that the house was not in a sanitary condition, or that the children were badly fed, or that both conditions existed. Under these circumstances I at once ordered the unaffected to leave the house, and this often stopped the spread of the disease. In one case the bad condition of the house was only revealed by the severity

of the disease ; two were taken ill at the same time, and one of them died. In my experience scarlet fever is a mild disease for healthy children in a healthy house, and with proper treatment, which should consist chiefly in giving little food and of the simplest kind, till the fever is gone and the risk of albuminuria is past, and especially in withholding any aperient at the beginning of the illness. It is apt to be much more severe in later life. Of this I have had several sad instances among my own relations and friends. The knowledge that the disease has been passed through saves much anxiety during an epidemic, or when by some chance a protected family has come in contact with the disease.

Another and most important question is whether it be possible to avoid infection from some accidental cause. Most certainly it is not. Cases often occur where the source of infection is absolutely unknown, others where it is discovered too late for its being avoided.

In my own practice a lady, who had been confined three days before, and her husband showed the scarlet rash on the same day. Neither had had scarlet fever when young. The lady, as generally happens under the circumstances, died. The husband's case was a mild one. His conjecture was that they had been infected in a town cab just a week before. There are strict rules against any public conveyance being used for carrying infected persons, but it is impossible to have this rule carried out perfectly, and I have more than once known the breaking of the rule to be connived at by the sanitary authority. I give a very glaring instance. I was asked, many years ago, to see a case of scarlet fever in a hotel in the Highlands at the tourist season. There was great anxiety, for obvious reasons, with all parties concerned, that nothing should be known outside. The case was a mild one. A fortnight later I was called to a nearer town on the same railway. On entering a

carriage on my return I was startled to find my patient wrapped up in a blanket, with her father, the nurse, and the local doctor who was also the sanitary authority. The high position of the father, and the presence of the doctor would prevent any one from suspecting an infraction of the law, and there was safety in the openness of the removal. The party left at a station farther on, near which a lodging had been got. In a case nearer Edinburgh the doctor, who was also the sanitary authority, did not give notice of a case of scarlet fever in the family of a dairy farmer, whose doctor he was, and nothing was known of it till cases of fever among consumers of the milk brought it into notice.

Not to dwell on the undesirableness of a system which puts temptation in the way of officials to break the law, no one, I think, can deny that the present plan of dealing with infectious disease is complex, costly, attended with much annoyance to all concerned, and utterly inefficient.

The kind of nursing necessitated by the removal of children to a hospital has very grave disadvantages. The nurse must be a woman of uncommon good sense and kindness to enable her to take the place of the natural attendants at the sick-bed, the mother or sister or a trusty servant with whom the children are familiar. I have met with many excellent nurses, but they certainly do not form the majority ; and the call for so many, owing to the present methods, has brought into the field numbers who are utterly unfit for the office. Many of them are unbearable, both to doctor and patient, from their want of sense, flippancy, and self-conceit. I met, lately, an excellent nurse now managing a home for a specialty, after having charge of a hospital ward for many years. She told me that should she want assistance she would get, not a trained nurse, but a woman with common sense who would do as she was bid. I was pleased lately to notice that Mrs. Earle, well known from her delightful

work, *Pot-pourri from a Surrey Garden*, comes down strongly upon the trained nurses of the day, and with her I leave them.

Another evil arises from calling in outside nurses. The females of the household lose their capacity for nursing, partly from want of opportunity, but also from nervousness, and a feeling of unfitness for a natural duty, not having the training now considered necessary. In the matter of nursing I can speak, if not with authority, at least from much experience. When sickness got into a family, except in some special cases, I did not in the first place advise that an outside nurse should be brought in. This may be a necessity now when usually no end of medicines, and stimulants and food are ordered to be given at certain hours, often during the night. The note of these, which it is one of the chief duties of the nurse to keep, may be very handy for the doctor, though I never once have had occasion to use it. But in most families I found some one able and willing

to do all the simple duties required, or these were shared with others. The infliction of a trained nurse on a family, so common nowadays, I occasionally hear bitterly complained of, and sometimes in not very temperate language; at the same time I know well that the services of a good trained nurse may be invaluable—if you can get her.

III

HOW TO PROFIT BY LIFE AT SEA

THE number who go to sea in search of health or pleasure is now very great, and is increasing every year. It is to these especially that I wish to give some hints as to how they may derive most benefit or pleasure from the voyage. What I inculcate may also be carefully considered by those whom circumstances oblige to travel by sea on business, or as a necessary and often an unwelcome part of their journey, when they have to remove to some distant part of the world.

First, as to the vessel. There is neither rest nor pleasure to be found on an ocean greyhound which travels at the rate of

eighteen or twenty knots an hour and upwards, nor in a crowded ship where mere numbers make quiet and peace out of the question. The old ten or twelve knot steamer was infinitely superior as to comfort, and fortunately this sort of vessel is still to be found on many lines where cargo is the chief factor in the trade, and the carrying of passengers is only a secondary consideration. The accommodation in these vessels is almost always in the centre of the ship where the motion is least. The food I have found to be at least equal to, and sometimes better than that of the large passenger boats. The fare is less than in the fast boats, and as the time of the voyage is very much longer a much better return is got for the money expended. A slow boat with few passengers has thus, for one whose time is of little value, and who is in search of health, or who finds pleasure in merely being at sea, enormous advantages over the fast and crowded liner. I have spent fully two years of my life at

sea, and I never dream of going on a quick ship when there is the chance of sailing on a slow one.

Another very important matter, when one goes to sea for health or pleasure, is to have a cabin for oneself. A good airy cabin is of course best, if it can be had ; but a small cabin is better than a share of a much larger one. This holds specially if the vessel is in any measure crowded. There is much room yet for improvement even in single cabins, but the present arrangements in double rooms are most imperfect. One bunk atop of another is intolerable, and every bed should at least have head room, or comfort is not to be thought of. A port which can ordinarily be kept open is a great luxury, but ventilation is much better understood than when I first went to sea seventy years ago.

The greatest error committed at sea is indulgence in rich food and too much of it. This is so universal that it can only be

accounted for by pure ignorance of the consequences on the part of the transgressor. I never yet heard of a vegetarian ship, though such a one would be a blessing to many who cannot resist the temptations of a rich table. It is the business of a company to see that it has a good name for giving its passengers a full supply of the best provisions available, and for having a first-class cook. The meals are the main events of the day, and the freshness of the sea-air and the open-air life help to sharpen the appetite of those who are not troubled with sickness, or who have got over this unpleasant but often salutary incident of life at sea.

If one wishes to get real and permanent benefit from a sea voyage all these temptations must be resisted ; and if not yielded to the temptation to exceed soon passes off, and it is found that there is much more pleasure to be got from a frugal meal taken slowly and well masticated, than when hunger demands the stomach to be stuffed as if to fill a craving

vacuum ; or when bitters or other stimulants and tasty dainties have to be taken to induce any appetite whatever.

Unfortunately for themselves those who live freely and indulge in stimulants and tobacco seldom suffer from sea-sickness, and as they have the same temptations as others to indulge at table, life at sea is to many of them anything but salutary. I remember, many years ago, that the death of two of England's best-known engineers was ascribed to high living on board their yachts ; and thus what under different circumstances was calculated to lengthen their active and useful lives brought them to a sudden and premature termination. Fifty years ago a sailor brother of mine, a very strong man who had been at sea for several years, had a severe attack of yellow fever in one of the Mexican ports. He recovered, and on going to sea again he was astonished at his suffering from sea-sickness. He was told that this very often occurs after yellow fever. Certainly

many who suffer most from sea-sickness are those who live temperately, and these, if careful after the fit is over, have no more suffering during a long sea voyage, whereas if they think it necessary to make up for what they have lost by taking more than their ordinary food, they may be again ill whenever the sea is even slightly rougher. Two years ago I took a trip to Spitzbergen with a large party. There seemed to be amongst the passengers an idea that a voyage in the Arctic regions required an abnormal quantity of victuals. I never saw such feeding on board ship before, and the stewards said they had not seen it either. The steamer was a big 4000-ton ship, but had not enough ballast, and on the slightest swell occurring she tumbled about heavily. Far the larger number of passengers got sick again and again, and were no better sailors at the end of a three weeks' cruise than at the beginning. It was certainly well for them in the end that they had these unpleasant experi-

ences, but many of them no doubt will not care to try a sea voyage for pleasure again. In the same vessel I had made, long ago, a two days' voyage to Bordeaux, the ship being on her way to the Pacific. The weather was calm. The dinner lasted two hours and was freely indulged in. Amongst others was a busy doctor from the West of England, out for a short holiday, who ate very freely and with much apparent satisfaction; he wished to make the best of his trip. He was to return in two or three days by another ship, and on the day before he sailed he called on me. He looked very unhappy, said he was quite out of sorts, and he looked forward to the voyage with no pleasure whatever. I ventured to hint that he had brought all his misery on himself, and that a good fit of sea-sickness would be the best ending to his short holiday. I have seen much misery at sea, and have suffered from it myself in my earlier days times without number, but I am not aware that I ever saw

a case of permanent injury from this cause. It is best, however, that the sickness should end at sea, as, if it does not, there may be a period of illness and fever after getting to land ; though this is often caused by the attempt to keep up the strength by food or stimulants before the stomach has quite recovered its normal condition.

I have seen very little benefit from any 'cure' for sea-sickness. Great care in diet for some days before sailing is better than taking a pill the day before, as is often recommended ; a very moderate amount of plain food, if one has an appetite for it, may be taken, but if there is no appetite no food should be taken till appetite comes, and nothing but water, hot or cold, as is most agreeable. If one has the least feeling of being ill, it is best to give in at once, and go to bed and remain there till he feels safe. The only exception I would make to this rule is if there is no proper ventilation, when an effort may be made to get

into the fresh air, and if possible keep there. Of remedies, I have known none of any certain value except liquorice or liquorice and peppermint lozenges. These allay the irritation of any acrid matters in the stomach, or of bile, which after a time is apt to regurgitate into the stomach from continued retchings; and they also render these when returned much sweeter.

When coming from the East in 1860 we took on board a young native lady at Smyrna. We had a long rough passage, and this lady suffered terribly. In the Bay of Biscay I was appealed to to try something for her relief. I gave her a few drops of chloroform dissolved in a teaspoonful of brandy, and added to a wineglass of water. This had a good effect, and we were no longer disturbed by her cries. It is well that a second dose was not called for.

When one has been ill for many days and feels quite exhausted a small glass of champagne sometimes acts like a charm,

but this or any stimulant taken too early does much more harm than good. I have more frequently known benefit from a wine-glass of stout taken with a morsel of cheese and biscuit. The first dose of this is often rejected, but soon a second is called for and retained, and other food may gradually be taken. If a little self-denial is now exercised, recovery of strength is often remarkably rapid, and the health is frequently much benefited, as it usually is after most acute diseases if properly treated.

Exercise is of great importance during a long sea voyage, but those who indulge in full living get lazy, and take no exercise at all. In most of my long cruises I do much more walking than any one else. When in active work at home, I considered that I got double the rest and general benefit at sea that I would have got in the same time on land. I have heard of a busy man being ordered a rest of six weeks every year if he wished to have the full

benefit from his holiday, and this, I am sure, is an excellent rule. But if the holiday is taken at sea I would look upon four weeks as a full equivalent. A voyage of two or three days is of little value, and the time, if no more can be had, would often be better spent in bed. Perhaps the greatest benefit got by a busy and fatigued man from a long sea voyage is that it takes him away from all his work with its anxieties and worries, and gives him the knowledge that these are left behind for a fixed period, during which no letters or telegrams can follow him. It is often best that he should go alone, and have no one interested in his concerns to whom to talk; friends are easily made at sea. The brain is very much left to lie fallow, small trifles take up the attention, and mental work can only be done by a very limited number, even if it is attempted. I believe it is a fact that almost no literary work of any kind is done at sea, not even when the subject

is of life and adventures on the ocean. I have more than once had occasion to find that a diary soon comes to resemble a ship's log, a useful but not a very attractive form of literature.

I do not dwell on the pleasures to be found on a voyage. These depend very much on the temperament of the individual. For myself, the *ennui* that is undoubtedly more or less felt by most is much more than made up for by watching the innumerable changes of the sky and ocean; the wonderful colours of the sunset, varying infinitely with the locality, the weather, and the season; the grandeur of the clouds, especially in the tropics; and, as soon as we escape from our own dull atmosphere, the magnificence of the stars and planets, which appear, not as with us in one equally distant firmament, but as if dropping from the sky, and each one showing its comparative distance. The appearance of new stars as one gets farther south is most interesting

to those who know the stars and constellations at home. Those, however, who take any interest in star-gazing are very few indeed, and most do not know a single star or a constellation, unless it may be the Plough, which is always with us. Many seamen even pay very little attention to the stars. Of this I have known some curious instances. I came from Rio in the second finest ship of a large company. The captain was a man well up in years, and had been at sea all his life. He had been very successful, having never met with any serious mishap, but of the stars he knew nothing, and said he did not need to, as all he wanted could be got from tables. But he was a most careful navigator for all that. Some dozen years ago the vessel I was on arrived at Key West late in the evening. I had come up from the South, and, as usual, had been watching the stars. I noticed that the Southern Cross was at its culmination just on the horizon, and it looked a

very fine object, appearing much larger than when high in the heavens. I alluded to this to the captain, who laughed at me, and said the Cross could not be seen in that latitude. Another American captain said the same, and asked where were the pointers. I said they were not up yet, but would be soon. They soon appeared, and then both allowed I was right. I suggested that, with other attractions of their vessels, they should advertise that Key West is the only point of American soil where the Southern Cross is sometimes visible.

Many of us are capable of admiring and receiving pleasure from a vivid representation of Nature, whether it be given in apt language in a glowing description, or on the canvas of a favourite artist ; but a well-trained eye and a loving heart are needed to understand how infinitely superior to the best of these copies are the real visions vouchsafed to us by Nature herself. These, if looked for, are to be seen almost anywhere,

and nowhere have I enjoyed them more than on London's foggy river, especially when viewed from an upper window about sunrise on a winter's morning. Under no circumstances can the promotion of a taste for these pure delights be better forwarded than on a long ocean voyage.

IV

ON RICE-MEAL

I HAD always believed—and this is a general belief—that rice, which is the principal food of the natives in many parts of India, is mostly a pure starch, and contains little from which to form a strong body of muscle and bone. I was undeceived as to this when on a recent voyage to Rangoon. I had asked if brown bread was to be had on board, and was told it was not, and that there was no wheaten flour to make it from. A few days after I was surprised to see it on the table, and of excellent quality. On inquiring of the baker, a very intelligent Scot, he told me the bread was made from white flour and rice-meal, four parts of the former to one part of the

latter. He had used this for more than twelve months when brown bread was asked for.

This rice-meal is got in the process of cleaning rice in the rice mills of India. From the rough *paddy* the husk is first rubbed off; part of it is used in the mill as fuel, and the rest is thrown into the sea. What is next removed is the rice-meal. This is sent to England, and is given to the pigs, or made into oil-cake for fattening cattle. On my return voyage the vessel brought nearly 1000 tons of it in bags to Liverpool and London, where it is in great demand. I was told lately of a vessel bringing home 6500 tons. It is not known to any of the corn-dealers in Edinburgh. Two years ago it was selling at about £3 a ton; since then, owing to the high price of all feeding-stuffs, it has been quoted at from £4:15s. to £5. I brought some of it home, and it makes excellent brown bread, when used in the above proportions. I have also some of the partly cleaned rice, from the

further cleaning of which the rice-meal is obtained in quantity varying from 7 to 16 per cent. In a specimen of the partially cleaned rice which I got from the largest mill in Rangoon, a considerable portion of the rich meal has evidently been lost in cleaning off the husk, as only 10 or 12 per cent of the grain, and this of the smaller size, has retained its natural red colour, which is somewhat darker than the natural grain of wheat. Hence it is probable that the rice could give even a higher proportion of meal than 16 per cent.

I have had an analysis made of this meal by the chemist of Messrs. Duncan and Flockhart, Edinburgh, and, although it had lost some of its flesh-and-bone-making ingredients, it was found to contain $12\frac{1}{2}$ per cent albuminoids, and $4\frac{1}{2}$ per cent phosphoric acid, which, in union with lime, as phosphate of lime, makes up the greater part of the ash amounting to $7\frac{3}{4}$ per cent. The meal is thus very rich in albuminoids and phosphates.

On the bank of the Irrawaddy I happened to see about a ton of rice which had been freed from the husk, but still retained its red colour; and I was told in Rangoon that the natives sometimes clean the rice for themselves, and use it in the form in which I saw it. Since my return I met an engineer who has for some time been in charge of railways in Assam, and he told me that red rice is used by the natives, who are a finer and stronger race than the Hindus. Since his return to Assam he has sent me fourteen specimens of different forms of rice used in the country. Some of these are quite white, and seem to have all the outside part rubbed off, others retain more or less of this. The roughest of all (marked 'Hill Berain') I have got analysed—No. I. I also got an analysis of the red grains picked from the specimen of rice mentioned above from which the rice-meal was got by grinding—No. II. No. III is an analysis of the rice-meal.

ANALYSIS

No. I.—*Rough Rice from Assam*

Starch	52.85	per cent.
Albuminoids	9.89	„
Phosphoric acid	0.96	„
Ash	1.18	„

No. II.—*Picked Red Grain*

Starch	52.7	per cent
Albuminoids	7.09	„
Phosphoric acid	0.465	„
Ash	1.27	„

No. III.—*Rice-Meal*

Starch	38.2	per cent
Albuminoids	12.47	„
Phosphoric acid	4.50	„
Ash	7.73	„

The friend who sent me the numerous specimens told me that the Assamese do not grind their rice, but knock off the husk by letting a heavy beam of wood fall upon it. The roughest specimen of the lot, of which I give the analysis, has all the appearance of having been treated in this way, and it is richer in albuminoids and phosphoric acid

than is the specimen given in Analysis II. The varieties of rice are known to be very numerous, and their values as food must also differ very much. Parkes, an excellent authority, gives 5 per cent as the proportion of albuminoids in the common white rice used in this country.

It will be seen from the analyses that rice-meal contains twelve and a half per cent of albuminoids, and the two specimens of rice with the husk only removed give an average of eight and a half per cent. It is possible, although I much doubt it, that a specimen of the best rice with its outer surface removed may be of equal value for food as another of poor rice with everything retained; but certainly rice of any quality is much more valuable economically when left with its rich exterior, than when it is deprived of this, and that for the sake of appearance only. It may be also that the rough rice will be found to be more agreeable to the palate than is the white rice;

just as many, and I myself among them, prefer brown or wheaten bread to the comparatively insipid white bread in common use. I heard lately of a family in the West of Scotland who had been in the habit of getting red rice from Ceylon, as they prefer it to the ordinary white rice. I have been favoured with two specimens of this, and it has the same appearance as the rice from Rangoon, which has lost its husk, and from which the rice-meal is got by grinding.

In this country the value of rice as a food is reduced still further by the mode of cooking. It is usually boiled in a large quantity of water. This takes out most of the albuminoids, and, as the water is thrown away, these are lost. In India the water used is just enough to swell the rice, and everything is preserved.

I have endeavoured to get the Government of India interested in the rice-meal question. It is a pity that the best part of the rice should be sent to this country for

cattle, when it is so much needed in India, especially for the young. As a matter of pure economy it is important that it be retained in the country. Two parts of our brown wheaten bread go as far as three parts of white bread, both in satisfying the appetite and in supplying the wants of the system. If the same ratio holds as to red rice and white rice, a great money-saving would be effected by substituting the former for the latter. The price of rice-meal got in cleaning white rice for this and other countries is also less than that of white rice; but this is of small importance compared with its value as a food.

A time of famine may be the best for introducing a change in the habits of the people. As red rice is already used in many parts of India, its general use and also that of rice-meal should not be a great difficulty. When we consider that brown bread is so little used among ourselves, though its use is increasing among the upper classes, and

that as yet the best of far the larger quantity of wheat consumed in this country goes to the pigs, we need not be surprised that in India also this thriftless system prevails, to the deterioration of many millions of people. In this country the matter is of less importance as, overfeeding being the rule, the poor white loaf may often do less harm than the richer brown one. In a poor country like India, where the people are underfed, the case is very different.

This paper was partly published in *Chambers's Journal* for April 28, 1900. A gentleman in Rangoon who is interested in rice, and who had seen an extract from the journal in a local paper, sends me some interesting particulars from which I quote the following :—

In the rice trade the value set upon the grain is based chiefly upon the extent to which it is cleaned and polished, and thus the most valuable grain commercially is that which has had the outer cuticle entirely removed in process of clean-

ing. This seems curious when we consider that it is really a case of sacrificing the nourishing properties of rice, for the sake of giving the grain a pleasant appearance. For certain markets the grain, after being cleaned to the highest standard, is artificially coloured with 'blue' for the sake of appearance. The rice-meal which contains the bulk of the nourishment is sold at home for feeding purposes, and in the East there is no demand for it except to a limited extent for feeding cattle in the dry season.

For Bombay and the famine districts a demand has lately arisen for what is called 15 parts cargo rice in place of cleaned rice. This consists of $\frac{14}{15}$ ths of rice with husk removed, and $\frac{1}{15}$ th of paddy mixed in, so that the native now gets the pure rice without any cleaning.

This last statement is most interesting, and goes to show that the introduction of uncleaned or partially cleaned rice could easily be effected among all the natives of India. Whether they could be induced to use the rice-meal got from cleaning the enormous quantity of rice sent to this and other countries is quite another question, but, for the young especially, it is a most important one.

V

THE STORY OF AN EYE

SOME forty years ago my left eye was severely injured by a blow from the cork of a soda-water bottle. This we know would not have given much trouble had it been treated properly by a few days' complete rest. It did not get rest, and soon I had to give up work entirely, and keep in a dark room. Inflammation of the eye set in, and it was fully six weeks before I could again use it, in fact I very nearly lost the eye. It seemed, however, to get all right, and kept so till about eight years ago, when cataract appeared, with short sight to an extreme degree. In three years the cataract was pronounced to be ready for extraction ; but I

was strongly advised to let it alone so long as the other eye, which had some traces also of thickening of the lens, was sufficient for all the ordinary purposes of vision. For some years before this, besides the gradual loss of sight in the left eye, there had come on in it a constant feeling of discomfort, difficult to describe, but such as to take away much of the pleasure of outdoor life. It was absent entirely only when I was in absolute darkness; keeping the eyelids closed even in a very moderate light did not give perfect relief. I often said I would willingly lose the eye, if I could get relief only by doing so. This continued for five years longer, the discomfort getting rather worse than better, but the cataract in the other eye remained very much in the same condition. In both eyes it was of the rare form known as the black or central cataract.

At last my friend Mr. George Berry, to my great satisfaction, agreed to operate, and neither he nor I apprehended any unusual

difficulty. The incision in the cornea gave no pain whatever, thanks to the use of cocaine, and the iridectomy which followed gave no pain to speak of. But now, when slight pressure was put on the eye to assist the escape of the lens through the wound, it was found that though free below it was adherent above. On stronger pressure being used the vitreous humour began to escape, showing that if the lens was to be removed at all it must be by mechanical means. Its removal was effected at last after several attempts with different instruments, and with considerable force. The whole operation took from ten to fifteen minutes.

The pain felt during these attempts at extraction was very severe, and such as I never experienced before. It was unbearable, and but for my great anxiety to get the lens extracted and my confidence in Mr. Berry, I fear that I would have called out and asked that the attempt be given up.

I could not have stood it much longer, and I was fast coming to think that success was impossible. I believe that Mr. Berry was coming to the same conclusion. Had we anticipated the difficulty, certainly no attempt would have been made, and removal of the eye would have been a welcome remedy for my long-endured misery.

The pain was different from any I have ever experienced. It was different entirely in kind from the slight pain of cutting the iris. At the moment, the idea occurred to me that it was a blue pain, and that of cutting the iris, or skin, or any other muscular texture was a red pain. I mentioned this at the time to Mr. Berry who told me that he believed some connection between pain and colour had been noticed. A friend, to whom I spoke of this, told me that she had seen some remarks on the connection of pain and colour in one of the weekly journals a few years ago, but I have not been able to verify this. The only

pain I can compare it with is that of a blow on the testicle, which also is very unbearable.

Of the local after-treatment of the eye itself, I need say but little. It was left of course in a very damaged condition, for which little could be done except to give absolute rest. The slightest movement even of the other eye caused for several days pain and strong scintillations of light, and the dread of any injury from the outside, either by myself or any one else, kept me nervous to a degree I could not have imagined. Sneezing, yawning, coughing were not to be thought of, and had to be resisted. Even involuntary winking of the other eye caused pain for several days. I was much pleased, however, to find that after the operation the feeling of loading and oppression in the eye and head which had existed for so many years had entirely left, and there has not been a trace of it since.

But my chief reason for publishing this

story of an eye, is to tell how I have lived since the operation, and how not only the eye but other parts of the body have been affected by the mode of living. Ever since I remember I have been more or less troubled with rheumatic gout. This I certainly inherited from my mother, most of whose family suffered more or less from it. Two of her five brothers died suddenly from heart disease; another, a medical man—he was surgeon of the ship which carried Napoleon to Elba—suffered for many years from very severe palpitation, which ultimately carried him off. Another was quite decrepid from gouty deposits, his hands especially being contracted and useless. The fifth died younger than the others of so-called gout in the stomach. Only one lived to sixty. They were all strong men, and lived freely. Of my nephews, several have suffered from rheumatic iritis, some of them more than once. On myself the effects of this dyscrasia were best seen on

my hands and feet ; the joints of the former have long been knotty and painful, and Dupuytren's induration of the palmar fascia has long been well marked in either hand. I have been troubled with irregular action of the heart all my days ; but this is now rare since I have known how to keep my stomach in order, and how to use self-massage, which, when applied vigorously over the region of the heart, at once gives relief.

For a few days after the operation I was offered nothing but slops, and of this I took but little. The nurse then urged me to take more solid and stronger food, on the plea that this was necessary for the healing of the wound in the eye. To her the after care of the patients was mostly left, and as she had been head nurse in the eye-ward of the Infirmary for fifteen years, and was a woman of more than common ability, she was well qualified for her duties, and the surgeons had, justly, great confidence in her. For the first time, I daresay, she had an intractable

patient. My great fear for the eye was that rheumatic iritis might supervene, and this, in addition to the mischief that the long and severe operation had done already, would have made a satisfactory cure hopeless. I resolved, therefore, to restrict my food to a less quantity than usual, and to abstain almost entirely from flesh food of any sort except milk, and this in very moderate quantity. I have long known that milk, the best food for the infant and the growing youth, is not a good food for the aged—it contains too much saline matter, especially of lime. This was brought home to me by Mr. Berry finding that the cause of my sensation of something in the eye was from the presence of very minute chalk stones, in the ducts of the follicles at the loose junction of the mucous surface of the globe of the eye with that of the eyelid. The removal of four or five of these gave immediate relief. I have taken less milk since, or only in the form of cheese, in the manufacture of which much of the

salts remains in the whey. This light and spare diet suited me perfectly, but in order to be able to get my own way quietly I left the comfortable home after nearly three weeks, and the drive of six miles over rough roads rather damaged my still very tender eye, and perhaps somewhat retarded the cure. By and by it was seen that the cornea just opposite the pupil was so thickened that another iridectomy was necessary, and for this I returned to the home four months after the first operation. The nurse now saw that my spare diet had suited me very well, and during the week I was again with her I was allowed perfect freedom as to food. She was an excellent cook, and her good things would be apt to tempt a less stubborn patient.

But, even with the rational system of diet which I rigidly followed, I doubt very much if I could have escaped the much-dreaded iritis but for a full and persistent use of self-massage, which I continued for more than seven months. During these months

I learned much of the value of massage, particularly as to the power it gives us of relieving local parts while the rest of the body is still more or less affected by rheumatism. I have used it both locally and generally for many years, and with much benefit, but never with the force and for the time I have done lately. For many days after the operation no general massage of the body could be attempted, as the least strain set up pain and flashes of light in the eye, but as soon as it could be done I rubbed any part which I could most easily reach. I soon found that so long as I kept the mouth open, a considerable degree of local pressure caused no strain and did not affect the eye at all. The eye itself is one of the few parts of the body which cannot be rubbed with any force, as it can neither be taken between the fingers, nor has it anything firm behind it to resist pressure ; but one can help the circulation in the eyelids and the muscles of the eye, by drawing the lids outwards over the edge of the

bones of the orbit all round, without pressing on the eyeball at all. This I was soon able to do, and I believe that the paralysed state of the upper eyelid, which for many days was complete, was relieved sooner than it otherwise might have been. It was long before I could put pressure on the bony edge and interior of the orbit, where pain was very considerable till I could rub freely and deeply without causing uneasiness in the eye itself. In this way I relieved entirely the rheumatic pains of both orbits, for the right eye was at first as much affected as the left. Four or five weeks after I got home, and two months after the operation, I first attempted to go out of doors. The weather was very cold and windy. I protected most carefully the left side of the face and head, but in doing so I left the other side too exposed. The consequence was that the rheumatic pains returned to the right eye, and for a time I suffered more from it than from the other. By giving justice to each eye in the matter

of massage I have since kept both almost entirely free, but I still continue to massage the whole face and head many times a day. The general massage I do mostly at night, and all along I have spent from one to two hours every night at hard work on my person. By using hard pressure I found several rheumatic points both of bone and muscle which I had not known of before, and I am now much freer from rheumatism than I have been during the greater part of my life. The local changes in this respect are much greater than I could have expected, and were in fact quite unlooked for. All the joints of my fingers were stiff and tender, and were more or less enlarged by gouty deposits. They are now quite free and supple, and the deposits have mostly disappeared, almost entirely so indeed except in the first joint of the little finger, on which there has been a deposit ever since I remember, and on the second joints of both thumbs, which also were very early affected.

As already mentioned, I have long had good specimens in either palm of 'Dupuytren's contraction of the palmar fascia.' In both the deposit has got softer and smaller, so that the natural lines, made so much of by the learned in palmistry, have again become much more distinct. I expect that the induration will soon disappear.

Another improvement is worth mentioning. I have had for at least thirty years a numbness in both feet, so that there was a feeling of some soft substance between the sole of the foot and the ground. For a time I much feared that this might be progressive. It is now almost gone, and I would perhaps not notice it, did I not know of its long existence. The result has been much helped by the use of a very powerful form of massage, viz. strong friction of one foot, especially of the sole, by the other. The heel can be used as well as the joint of the great toe. This gives strong exercise to the muscles of the leg and thigh, and does for the lower

limbs what massage by the hand and fingers does for the upper. This may be assisted also by having the bed shortened by a hard pillow, or any solid article resting on the bottom of the bedstead, which resists the feet when pressed against it. This hint I got from a lady I had to visit in the West for Professor Simpson, more than fifty years ago. In her lodging there was no sofa long enough for her, and she was constantly and with some irritability pressing her feet against the foot of it. She wrote me by and by that this had proved quite a godsend to her. She was frequently laid up for six weeks at a time, and at the end she had very much lost the use of her legs. On this occasion she could at once walk as usual.

What is still more remarkable. I have gradually come to see better with my right eye which has had the lens somewhat affected with cataract for nearly ten years. I can now read with it the smallest print without the glasses which I have used for many years.

Long ago, when in poor health, I was much annoyed by constant noises in my ears. These were not noticed while travelling in a railway carriage, or when in a steamer over the screw or near the engine, and if I could keep this up for several days the noises did not return for some time. As my health improved they got much slighter and gave little trouble. For the first time they are almost entirely absent.

I am now also free from eczema on any part of the body. This I would look on as a doubtful advantage, were it not that I have a very tender skin, and I am sure that the eczema would soon return if it were needed ; but so long as I live carefully, so as to leave the mucous surfaces free from an excess of blood, and the blood free from an excess of plastic matters, I have no fear of a return of the—under other circumstances—whole-some eczema.

Another form of massage, or an equivalent to it, which I use very freely, is taking

a succession of deep inspirations. This assists, in a very active way, the circulation through the heart and lungs, to which direct massage cannot be applied. In so doing it necessarily assists the circulation of the whole body. I remember reading, some years ago, an article in one of the magazines by an Indian officer who had found wonderful advantage from this, especially in headaches, but also in many other complaints which are now believed by many to arise from uric acid in the blood. I tried this in my own case too soon after the operation, while the eye and the muscles of the orbit were in a state of complete collapse. Two or three deep breaths at once brought on pain and flashings of light, much as straining did at the same time. This was, no doubt, caused by an increase of tension in the parts, which were so collapsed that no increased circulation through them was possible.

How far it may be necessary for me to keep up self-massage both local and general

for the future remains to be seen, but it cannot require so much to keep off local pains and deposits as it has taken to remove them; and as it is mostly done in bed, I know no better exercise for an old man, especially in a cold climate. At the same time I have no intention of giving up exercise in the open air, which I have always taken even in cold and wet weather with the help of a mackintosh and warm clothing. Nor have I any temptation to increase either the quantity or the quality of my food. I enjoy every morsel I eat in a way that I believe is done by very few, and I have no desire for more. Though my nitrogenous food, in the form of bread, milk, or its equivalent in cheese, and fish or flesh, which is a very small item indeed, does not amount to more than eight ounces daily, I have a great variety in green vegetables and fruit in all forms, raw, cooked, or preserved, and, *pace* Dr. Haig, I have a good cup of coffee or tea in the morning, and usually a cup of tea in

the afternoon. The tea is made from the twentieth of an ounce of tea ; the uric acid or xanthine which this contains is, I believe, more than neutralised by the hot water taken with it, and the feeling of comfort is, no doubt, due as much to the stimulus from this as from the tea. A retired medical officer from India told me lately that he knew of a gentleman, long a martyr to indigestion, for which he had tried many cures, who went out to Ceylon to grow tea. He took to drinking very weak tea in large quantities and at all hours of the day, and to this he ascribed his getting rid at last of his dyspepsia. Strong tea, taken often or in large quantities, no doubt does a great deal of mischief. If I take a fancy for a glass of wine I indulge it, but the desire for it rarely lasts for more than two or three days, and often at some months' interval. See 'Stimulants' in *Fads*.

Among the other important benefits which have come to me during the last few

months I must not omit a great improvement in my sleep. The shock of the operation, and the constant dread of anything approaching the eye, brought on a curious nervous condition, which I had not before experienced. In the hope of relieving this I had recourse to a remedy which has now very much gone out of fashion, and that, perhaps, from its having been too much run upon some forty years ago. This is bromide of potassium, a remedy which I prefer still to all the numerous drugs for soothing the nerves and promoting sleep which have since been brought out. I took thirty grains at bedtime for three weeks. The first dose acted like a charm. I slept very much better than, with very rare exceptions, I have done since I was a youth, and this has continued, after giving up the night dose. To me it is an enormous gain. For long I dreaded going to bed, and the night seemed interminable.

I have been able to satisfy myself that

the breaking up of the muscular and other textures, so as to set free the used-up material, is done directly by the massage of the part, and not, or only slightly, by the force used in the process. The action of the kidneys was at once increased by general massage of the body, while local massage of the fingers, for instance, or over the eye or forehead, where there was little but the bone to act upon, was followed by no such effect, although the force used was very great, and continued for a considerable time. It is well that this is so for one who cannot use self-massage, as the chief benefit may be got from a good masseur. In my experience, however, these are very few compared with the number who practise the art, and if such a one can be got the cost comes to be very considerable. I doubt if any one has ever spent the time and the force that I have done on myself since the first operation, and I do not know of such results having ever been

obtained, but even one such experience is worthy of being recorded. At the end of it I am stronger, in my limbs especially, than at the beginning. I am a few pounds lighter perhaps, but the loss has been entirely in the abdominal organs, and this is certainly no evil but the reverse.

In contrast with this story of an eye, so far as feeding is concerned, I may shortly give the experience of a lady who had the misfortune to suffer from a badly inflamed eye, following a serious accident. She was attended by an able surgeon, who for a time had to leave her to the care of an excellent experienced nurse. The nurse considered that it was absolutely necessary for the healing of the eye that the patient should take a full supply of what she considered the proper food. She insisted on this being taken, though the patient knew it could do nothing but harm, as she had a disgust for all food, and her tongue was coated with a great thickness of fur. Un-

fortunately she had no sickness, and did not get rid of the superfluity in this way. The presence of a mass of undigested and fermenting food in her stomach brought on severe and constant pain in the bowels, with an intense feeling of depression and wretchedness. These were only relieved on the return of the surgeon, when she was allowed to live more rationally; and, after a long course of treatment, she recovered perfectly the use of the eye. She would have been spared much unnecessary distress had she been allowed to live as nature so clearly indicated. On the other hand, my friend General ——, when inquiring about my eyesight, told me he had just heard of a strange cure. A youth whose sight was beginning to fail, was told by an excellent oculist that his case was hopeless, and he would very soon be entirely blind. He was about to give up his work, which required good sight, when a lady friend gave him a sum of money, and sent him to a well-

known oculist in Germany, who on examining his eyes said at once that he would cure him perfectly in six weeks. The means used astonished the General. The youth was put on a very restricted, almost wholly vegetarian diet, and was told to get well massaged about the head, shoulders, and neck, and also to do this frequently for himself. After six weeks of this treatment in hospital, and with the aid of glasses, the sight was completely restored. I was pleased to be able to tell my friend, that these were precisely the means I had been employing since the operation on my own eye in order to prevent further mischief, and also with success.

Postscript (ten months after the first operation for cataract).—Since the above history was written, I have gradually reduced self-massage, but I still go over the whole body several times a day. I have had no rheumatic or other pain in the eyes or orbits for two or three months, and very rarely any-

where else, although the weather has been most unfavourable. I can rub the joints of the fingers very strongly without any inconvenience, and no one could, I think, discover in them any deposit whatever. I still take the same quantity of nitrogenous food, and find it sufficient. As I continued rather thin I have, for the last eight weeks, taken to breakfast some bacon, which I find suits me, and during that time I have put on five pounds. I am now just my usual weight. I believe I could fatten up readily if I wished, but *cui bono*? I wish I could induce those who have received much benefit from massage in the Weir-Mitchell treatment to be satisfied, and to adopt a much more restricted regimen, so soon as they have recovered their appetite and put on a reasonable amount of flesh. The result would certainly be more satisfactory. The same remark applies quite as much to cases of phthisis, now treated with open air and feeding. The good results from the former

are most gratifying, but I have frequently known all the benefit neutralised by an enforced adherence to the latter. This holds especially in cases complicated with hæmorrhage from the lung. I have seen two very bad cases within the last few weeks, and I gave others, in *Plea*, p. 60, and *Fads*, p. 120, which I met with before the great value of open-air treatment was known. The constant living in the open air seems to have, in many cases, the same effect on the appetite as has massage in the Weir-Mitchell treatment.

Though a single experience, the history of my own case for the last ten months gives ample proof that the amount of nitrogenous food supposed by the physiologists to be necessary, even for an idle man, for a healthy condition of the vital organs, is ludicrously above the mark. As any one can see for himself, the food consumed by the great majority of the healthy, say on board ship or at a hydropathic establishment, is much

greater even than that allowed by the physiologists. This being so, we have not far to go for a true cause why the most perfect machine of nature's workmanship breaks down on the average before it has lived half of its allotted time.

VI

ON THE RAPID AND PROGRESSIVE DETERIORATION OF THE YOUNG

THE *Times* of October 24, 1898, gives a letter from the doctor of one of the great English schools on the physical condition of the last hundred boys admitted. The examination was made within a few days after admission, and 'was as carefully and thoroughly performed as if each life were about to be insured for a large sum of money.' 'The boys were typically healthy lads between thirteen and fifteen years of age, and in most cases the parents were not cognisant of any bodily defect in their sons.' 'They may be reasonably accepted as probably typical of any other set of boys

of like position and training, similarly collected without choice or discrimination.'

An analysis is given of the physical condition of those hundred boys. It does not include 'minor imperfections as stammering, tendency to chilblains, defective teeth, and many other failings.' The number of 'deformities' amongst them amounted to sixty-three, and 'they comprised lateral curvature of the spine, pigeon-breast, knock-knee, and flat-foot,' with some congenital malformations which were not important.

Besides these deformities there were twenty cases of defective sight, nine of defective hearing, and twenty-two of albuminuria. The chest measurement of sixty-eight was below the average. It is manifest that the averages by which these measurements are estimated were calculated at a time when the boys were better developed than now. If new averages were made out, the figures would be lower than these so-called normal development figures which are taken.

What was once the average is now so no longer; the standard of fifty years ago is now quite out of reach.

The only hint given as to the cause of these abnormal conditions is, that 'the deformities in the majority of cases have arisen after the child has left the nursery, and are due to faulty development from imperfect physical training, as well as from vicious postures in the process of education.'

The publication in the *Times* of the results of such an examination by an official expert was calculated to make a strong impression on the public, as well as on the parents of boys sent to our great public schools. The doctor says in his letter that 'the importance of the facts disclosed is supreme, and even from a national point of view,' and also that, 'the large number of cases of defective sight and of albuminuria will astonish many.' A few letters followed in the *Times*, one from a medical man of thirty years' standing, who is not surprised

at the deformities in youth, as children are no longer treated as children, but as little adults, and are nourished, or attempted to be, on so-called foods which tempt the palate, and do little towards construction or supporting the frame.' He regrets that the simple but perfect foods which formerly figured in the nursery and the schoolroom, such as milk, oatmeal, and other cereals, with really nutritious bread, are now little valued.

In the *Spectator* for November 12, 1898, there was a letter from another medical man, who ascribed the deterioration of youths to their being overworked, both physically and mentally; one of these he thought they might stand, but not both. I ventured to send a letter to the same paper, in which I said I had long known the bad state of matters with boys, both in the preliminary and public schools, but I ascribed it mainly to overworking the stomach by giving too much and too rich and exciting food. I

went into this very briefly, and added that if some change in the manner of rearing our first-class boys did not come, and come soon, England would have to look elsewhere for her leaders than to our great public schools. This, I fear, was considered too strong language for the readers of the paper, and the letter was returned with thanks.

I have mentioned in *Plea for a Simpler Life*, p. 4, that the excuse given for the change from a depleting to a repleting system of treating disease was found in a supposed alteration in the human body, which rendered it less able to bear lowering measures than formerly. I and others could find no proof of this whatever, and except for a short time at first, I have not heard this excuse mentioned. But I have long known that there is a very marked and progressive deterioration of our youths, and especially of the wealthy classes, and I have pointed out to parents that this is caused mainly by the unscientific system of feeding

which gradually spread to the children from the elders, who were the first to follow the new mode of living introduced about sixty years ago. What the effect has been, after two generations, is now seen in the report above quoted. As there has, so far as I have seen, been no attempt by either doctors or masters of other large schools to controvert this official statement, and that after a period of nearly two years since the report was published, it may be taken as a true presentment of a deplorable situation.

It is a curious circumstance that the supposed deterioration of the race, which was given as an excuse for changing the old plan of treating disease and introducing a new and opposite one, should have been brought about in reality by that very system which was intended to prevent it. Now that the fact of a great falling off in the stamina of our youth is established beyond dispute, it is to be hoped that something will be done to check it in time, but that cannot be done to

any good purpose till there is some agreement as to the causes which have led to this national calamity. But here as yet there is no agreement whatever. If I may judge from what was told me by the headmasters of two of our great schools, the almost universal idea of the parents, especially of the mothers, is that the diet of their sons must be a fuller one than that necessary for the rest of the boys, and especially that they must have more butcher's meat. Till the parents can be disabused of this idea there can be no hope of any improvement. I have been trying for many years to show that this idea is exactly the opposite of the truth, and I will state shortly the scientific reasons why it is so, and why the physical condition of our better-class boys is bound to become worse and worse from generation to generation.

For the growth of the human body a regular supply of proper food is necessary from the earliest period of its being. Before

the birth of the infant this is got directly from the blood of the mother. After birth it is furnished by the mother's milk, which if of good quality has all the ingredients necessary for the growth and daily wants of the child, and this for an indefinite period. The healthiest children are reared in this way, and should have no need of any assistance from drugs or chemical foods whatever. Many of the children I have had to do with for more than half a century, and who are now come to man's estate, have not had medicine of any kind, and have had no need for it, even when going through the ordinary diseases of childhood. I do not here go into the very wide subject as to how the child is to be fed after the use of milk only is given up, but shall endeavour to point out what elements are absolutely necessary in the food of a growing youth, and how terribly these are wanting in the foods which are in the present day considered the best and fittest.

Food has a double duty to fulfil. It must

supply what is wanted to form the various textures of which the body is composed, and to make up their daily waste; this is the function of the nitrogenous element in food. It has also to provide enough carbon to give the heat and force necessary for warmth, and for carrying on the circulation, respiration, and other vital functions of the body. For both these purposes nature provides abundant materials, the most important being wheat and other cereals, milk and the flesh of various animals and fishes, besides fruits and vegetables, some of which give excellent articles of food, and most of them salts, which are also necessary in the human economy. The subject of food is a very wide one, but we have only to consider it in connection with the growing child and youth, and with the changes in their diet during the last half century.

In the middle of the nineteenth century the food of the children of the upper classes was still very simple, even after a fuller table

was getting common for the elders. Milk, porridge of oat or wheaten meal, eggs, fish where it could be got, and perhaps a bit of fowl occasionally, were the staple foods for children while in the nursery, or fairly into their teens. But the new idea of the necessity for 'keeping up' was extending, and was gradually coming to affect those of tender years, till it is now in full force among the young of all ages, and has reached an extreme which it will be very difficult to surpass. It is true that the stage of growth demands a comparatively fuller allowance of flesh-forming foods than does that of full-grown manhood; but the means now used to attain this end have been so perverted that a quite opposite effect is produced, and one result is the very low condition of boys from twelve to fifteen who now come up for admission into our large public schools.

I have been told that in most large and many small schools, the food given to the

boys is insufficient, and that the butcher's meat, especially, is of so bad a quality and so badly cooked that it cannot be eaten. This is a calumny on the masters of the boys' houses which I cannot entertain for a moment, and it is only given as a cause of the weakened condition of the boys, when the real cause will not be looked at. The real cause, and I have said so for well-nigh fifty years, is that too much strong animal food is given, and that this, while it certainly gives enough flesh-forming material, gives next to nothing for the bony skeleton and has also a stimulating element which over-excites several of the most important functions, and thus wears out the system instead of strengthening it. (See *Fads of an Old Physician*, chap. xiv.) The 'old-fashioned' foods for children which I have mentioned contain all that is required for the growth and upkeep of the growing boy, and they have none of the stimulating element whatever. This is a most important difference,

and must be gone into more fully. Besides what is required for forming and keeping up the body, food, as I have said, must also provide what is necessary for giving heat and force. This is done by the burning up of carbon, and is quite analogous to the production of steam by coal, though the combustion in the human body is done much more slowly, and at a much lower temperature, $98\frac{1}{2}^{\circ}$, instead of above 212° . The carbon is taken into the body in the form chiefly of starch, sugar, and fats, as butter, suet, etc. Carbon also enters into the composition of all flesh matters, and the oxidation of this may add something to the heat and force of the body.

Good milk contains all that is necessary for the growth and maintenance of the body. It is thus in itself a sufficient food—and in this it stands alone—for the infant and the youth. Besides giving all that is wanted for the soft textures, it contains lime and phosphorus, which go to form the bones of

the skeleton and the teeth.¹ Oatmeal and wheaten flour are excellent foods, and when taken with a moderate quantity of milk form perfect foods. They are rich in albumen and starch, and also in salts for the bones. Eggs are very nutritious. They consist mainly of albumen, but the yolk contains an oily substance which is apt to disagree with some, who of course should not use them. Fats, butter, suet, etc., are carbonaceous, and are productive of heat and force when oxidised in the body; or if in excess of the immediate wants they are deposited as fat, and give a reserve of heat and force which may be called upon later when wanted. All these foods are excellent, supplying in due

¹ It is well to mention that what makes milk the best food for the infant and youth, makes it an improper food for the aged. For them the lime of the milk is not wanted, and it can only do mischief by causing deposits in various textures. This seems to be forgotten by many medical men, who order milk in huge quantities to middle-aged and old men. This is in some respects an improvement on the giving of much strong flesh food, and may be looked on as an approach to a better system; but it has yet to be learned that the best food may be almost as injurious as the worst, if given in too great quantity.

combination all the demands of the body; and if taken in proper quantity by a growing lad he will find himself, when at his full development, in sound health and fit for all the duties of his manhood. This may be a counsel of perfection which, at the present time, few will be inclined to follow, and many will not be permitted if wishing to do so.

Let us now inquire how the young of the last two generations have been brought up, and what has been the chief cause of their undoubted degeneration.

This may be stated in a very few words. The best articles of food are not given, or are altered so as no longer to supply the wants of the body, and another food is given which does not supply fully the daily wants, and which has a stimulating influence which contributes further to weaken the body by undue and premature excitement of its appetites and passions.

Oatmeal and wheaten flour are, as we

have seen, excellent foods for the young. The former has the flesh- and bone-making ingredients, and cannot be spoiled by any manipulation, as the grain of the oat is homogeneous all through. It is getting more into use among the upper classes, though mostly not as a meal, but as an addition to an already too full breakfast. Wheaten flour has the same good properties as oatmeal, as it is got by grinding the whole grain of wheat as nature gives it. But in order to produce the white loaf, which is now so much used by rich and poor, every particle of the darker exterior is rubbed off in grinding, and the best of the flesh- and bone-forming ingredients is removed and goes to the pigs, thus converting one of the best natural foods into a very poor one for the growing child and youth.

The other food which has come very much into use for the young for the last two generations, is butcher's meat. The

ox makes a good body of flesh and bone from despised grass and other vegetable substances, but the bone-making material goes to the skeleton of the animal, and is almost totally wanting in the flesh, which is thus a poor food for a growing youth. It no doubt affords a full supply of flesh-forming materials, but, especially in its strongest and most favourite forms of roast beef, beef-tea, and extracts of beef, it contains a non-nutritious, but very stimulating element, the effect of which on the young is very disastrous. This is found in its concentrated form in Liebig's Extract, which Liebig allowed to have no nutrient element whatever. But it is one of those substances which lessen the waste of the body, as do tea, alcohol, and other stimulants, so that if less food be taken it makes it go farther, but, on the other hand, if more food is taken it interferes with its digestion and leads to repletion with all its evils. The more sapid or tasty a food is,

it brings more blood to the stomach, and tends to keep it and the other abdominal organs in a congested condition. This, while it lessens the taste for simpler and better articles of diet, leads to a demand for more food of the same kind, as well as for strong drink. It also increases very much the risks from the infectious diseases of childhood. These I have long known to be very trifling for properly-fed children, if at the same time the air of the house is not contaminated with sewage gases.

But the greatest evil of a rich animal diet is that it excites prematurely the passions which should be in abeyance till puberty is arrived at. The bad habits this leads to were almost unknown in the early years of last century. I have the best authority for stating that they were then unknown in some and probably in all public schools; they are well known now to the masters and teachers of schools, and also to the doctors of lunatic asylums, which they help very much to fill.

Unfortunately the asylum doctors consider the bad habits to be not the cause of mental derangement but a consequence of it. This is an absurd contention to one who knows at how very early an age the most common of the habits is formed, and how frequently it is lost, if only the exciting flesh food is withdrawn. The latter fact, which I am pleased to say I have frequently verified, goes to prove that high feeding may be an indirect cause of lunacy, but that evil habits are not its consequence. This is another question I have to raise with asylum doctors, but like others I fear they will take no notice of it. They have the fashion of the day with them, which I have not as yet.

We have seen how lowering is the high system of living to the youth individually, but the same applies to the female, both young and old ; and this accounts very much for the progressive deterioration of our boys from generation to generation. The mother being badly fed herself has little to spare for

her unborn infant; she has no reserve especially of bone-forming matter, and what little she may have goes to form the bony skeleton; for the less immediately important teeth she has very little indeed. If she tries to feed her child her milk has the same deficiency, and it is well that so many mothers of the upper classes give up this very important duty. If a really good nurse is got as a substitute, this may prevent deterioration going farther in the individual child, but I have frequently known that a strong country woman who was rearing a strong healthy child on plain fare, soon failed from being put on a full flesh diet, with plenty of stout into the bargain. Innumerable foods for infants are now in the market, but, if not given in too great quantity, I believe that good cow's milk is on the whole the best, and undiluted even with water if it suits the case. If a child is thirsty or feverish plain water is far the best remedy, but it is seldom had recourse to.

It is most unfortunate that the present mode of feeding youths at school has got such a hold of the great masses of the country, especially of the upper classes, that the masters are powerless to change it, although knowing well its evil effects. I tell in *Plea for a Simpler Life*, p. 106, how a headmaster, who long thought that the prevailing plan of treating his boys was the right one, came to know that he was mistaken, but found that it was impossible to make any change. This was many years ago, the master is now dead, but the same system still goes on. Another, the headmaster of one of the large English schools, wrote me not long ago, 'We are absolutely bound hand and foot by doctors and mothers who insist on an enormous amount of food being given.' I have long been a preacher in the wilderness of a more natural, and infinitely more scientific, method of feeding the young, and I have despaired of seeing any improvement in my day. Now that the bad results have

got to so extreme a degree, as told by M.D. in the *Times*, it is to be hoped that it will attract the notice of the public, whose opinion and action alone can remedy what is perhaps the worst of the many evils of the day.

VII

ON ATHLETICS, ETC.

IT is well that each of us should keep his body in good working condition. It is also well that the means whereby this is brought about should be such that this condition be permanent, and not merely temporary, and leading sooner or later to an unsound habit of body, and, after a period of apparent health and activity, to exhaustion and premature decay.

For a considerable time athletics have been considered of so great value to the growing youth that in some of our public schools and colleges the choice of a master has been determined, not only by his teaching powers, but also by his known character

as an athlete; and there is room for the belief that in some instances this latter has been the more potent element of the two.

Even in the case where safe measures as to food, etc., are resorted to in order to induce an athletic condition of the body, the question may be put whether this is necessary, or even desirable, for the great mass of schoolboys and others who have no intention of making athletics a profession, or who wish only for the eclat to be gained by being victorious in games which require an unusual exertion of the muscles of the body. It is manifest that few can attain this pre-eminence, but it is aimed at by numbers whose natural powers can never enable them to reach the wished-for goal. To most of these the strain may do more harm than to the few whom they strive to imitate. To all, whether naturally strong or feeble, the effort after perfection causes unnecessary and excessive exertion, which must in some measure exhaust the body, and lead to

premature decay. I am by no means forgetful of the aphorism that it is better to wear out than to rust out. This, like many other wise sayings, contains a basis of truth, but it mentions only two extremes, and ignores what is often better than either, that there may be safety in a middle course. This is too often forgotten, and perhaps more than ever in the present day. Another most serious evil arising from the constant excitement of striving for the mastery is that it induces a bad habit in the youth which unfits him for the more sober duties of life, and inclines him to keep up excitement, which has become his daily bread, by some sort of gambling in its numerous evil forms. Up till the period of the two last generations many boys delighted in a walk in the country simply, or with the object of making a collection of eggs or butterflies or plants. This I have not met with for many years, except in students of Botany, to many of whom it is more a duty than a pleasure.

There were plenty of games in my young days which gave sufficient exercise and pleasure with a minimum of excitement, and which, along with a wholesome mode of living, led to the forming of a healthy mind in a healthy body, and had none of the elements which, as I have shown in the last paper, are leading to the deterioration of our youth to an extent which few as yet are conscious of, even in their own boys.

But if an athletic state of the body, when brought about by healthy means, is not wholly a blessing, when reached, as it is mostly in this country at the present day, by a system of living which is the reverse of healthy, it becomes an unmitigated danger to its possessor, and, if kept up for any length of time, ensures for him a broken-down system and a shortened life.

It has been sufficiently proved that the highest condition of body can be attained on a moderate amount of vegetable food with or without milk, combined with regular and

continued exercise not pushed to any extreme degree. It has also been fully proved by numerous well-known examples that youths and men who live strictly on vegetable food can stand prolonged exertion much better than others in whose diet animal food is a large ingredient. I am not aware that this has been tested in any of our great public schools, in all of which flesh food is freely given at least once a day.

I do not intend here to discuss the numerous and very sad consequences of a prolonged course of training; this I have done elsewhere. But I wish to mention a few of the cases which have come under my own observation.

Some twenty-five years ago, I went, for the last time, to the annual dinner of the Edinburgh College of Physicians. The dinner was then, and I believe is still, one of the most sumptuous given by any public body in the city. I sat next to an old medical friend, and we got upon the different

methods of bringing up the young. He well knew my ideas, but he said he did not agree with them, and that he gave his sons, of whom he had several, as much butcher's meat as they could eat. I resolved to keep a watch, so far as I could, on their subsequent history. He himself died long ago, and it is seldom that I have come across any of the family. But recently I heard accidentally that one of the sons, who was in an excellent position as partner in a leading legal firm, had to give it up, as he was seized with general paralysis when still a comparatively young man. He was well known as one of the first athletes of his day, and as he was so up to quite a recent period, his health had presumably held good till he was laid aside by a hopeless form of disease.

Very long ago a clergyman came to see me from the North of England. He had been one of the first men in his college as an athlete, he had kept up his training mode of living, and had led a very active life

in his parish. For a short time before I saw him he had been troubled with a severe pain in the back for which his doctor could find no cause. An abscess soon manifested itself over the sacrum, and on being opened a large quantity of pus escaped. This was the first of a series of abscesses which showed themselves in different parts of the body, and came rapidly to a huge size. One or two of these were opened by Mr. Syme, and an enormous quantity of pus came from each of them. Then came a huge collection in the groin which Mr. Syme declined to open. He considered the case to be hopeless, as the patient was now reduced to an extreme degree of debility, with a small bright-red tongue, and aversion to take any food. Mr. Syme said I might keep him up for a little with wine or other stimulants, but that opening the abscess would probably be fatal at once. Next day it was giving so much pain from distension that to ease him I was obliged to open it. An enormous

quantity of pus escaped—I should say quite half a gallon. A few days after this I found him asleep from chloroform, which he took occasionally when pain was very severe. He had felt a sudden pain in one of his eyes, which had been for years of no use to him in consequence of an accident. On calling next day I found that the eye had already burst. This, if I remember rightly, was the last of the sudden collections of pus. Altogether, he must have lost many quarts of pus. I did not care to give him wine, and he had no wish for it; and for several weeks he lived on a very minute quantity of milk, which he took occasionally in sips, more to moisten his tongue than as food. To the surprise of us all he gradually began to improve and to take a little simple food, and he was able to leave for home after being fully three months in Edinburgh, but with only one eye, with a stiff shoulder, and with his right thigh drawn up at a very considerable angle to his body. Some

months later I went to see him at his vicarage, and found him in excellent health. This case I met with early in my practice, and it encouraged me much to expect good results, even in very hopeless-looking cases, by the simple expedient of leaving them almost absolutely to nature.

In a recent trip to the East I had, on the return voyage, the opportunity of witnessing the effect of my method of treatment on a young man who had broken down and was coming home in the hope of getting better advice. He was in an excellent position, which would have still improved had he kept his health. He had enjoyed good health till four years ago, when bad dyspepsia came on. He was still a fine powerful-looking man, and had been one of the first athletes in the place, his specialty being boat-racing. Quite recently his doctor told him that he had some very serious organic disease in the region of the stomach. I had frequent talks with the captain of the vessel

on the way out, and he had adopted my views with some enthusiasm. He knew that I had come to sea for a rest, and that I wished to have no patients. The invalid had been treated with no end of drugs, from which he had derived no benefit, and he had found for himself that the only ease he got was by lessening the amount of food, as to which he had no advice whatever. One day after he had read my *Plea* and had some talks with the captain, he told me that he had resolved to abstain from all food, and I encouraged him to do so. This at once relieved him of the pain from which he always suffered after his meals. For a week or ten days he took nothing like a meal, but I noticed that when he came to the table he would take a small bit of bread or cake. As he was his own doctor I did not object to this, though I saw he sometimes suffered in some degree, and I told him he would be taught by his errors; occasionally when he had pain I made him lie down

and gave him some massage, which always relieved him. I found then that there was thickening of a portion of the bowel, which I have often found in cases of severe and long-continued dyspepsia, but this was the only form of local disease which I could discover. He improved very much, even in strength, and had he gone on in the same way till the end of the voyage he would have been comparatively well. He was so much better after a fortnight that he went ashore with friends, and took a good French breakfast in a hotel at Algiers, where we stopped for coaling. He was much pleased to find that this did him no harm ; next day, however, he again took a good breakfast, which brought back his painful dyspepsia, and he had to return to a very limited diet, on which he again improved. On leaving the vessel at Liverpool after another eight days, he told me he felt better than he had done for two years, and he was still a strong, healthy-looking man. I warned him of the

difficulty which he was sure to have in continuing his restricted diet, especially with his lady friends. He soon found this was so. In London they insisted on his seeing a doctor, who prescribed the right food but in too great quantity, and his dyspepsia returned. He wrote to tell me this, and I could only advise him to take little food, or none at all, as he found necessary. I soon heard that he had gone to live with a relative in the south; she insisted on his seeing a doctor, who put him at once on full diet. This, he wrote me, he compelled himself to take, though he suffered intensely after each meal. After a week, on the day he wrote, he had severe hæmorrhage from the stomach, and he again asked what I thought he should do. I said that I did not regret the hæmorrhage, which would probably relieve the pain, and would certainly prove that feeding would not do, and that this would no longer be pressed upon him. He wrote soon that he did feel better, and

that he had taken to massage, which I had recommended to him from the first. I did not hear from him for two years, when he came to see me in London. He was then free from dyspepsia, but did not look at all the fine strong man he was when I last saw him. I am very sure that a month's abstinence from food when I first saw him would have put him all right, but, as I have said, he did not consult me, though I quite encouraged him, when he asked me, to continue his abstinence. The dyspepsia no doubt saved him from the fate of many athletes who get no pull-up till it is too late.

I had a curious, and almost a unique experience with the numerous ladies on board the vessel in connection with this case and another. A young man was returning from India whose health had broken down from malarial fever, when superintending the formation of a tea garden in an unhealthy district in the south of India. He had been obliged to give up his post, and had resolved

not to return. The captain advised him to sit next to me at table, and to live as he saw me doing. This he did most strictly, and he gradually improved. The ladies were perfectly wild at me for encouraging two poor invalids to live so abstemiously, but after seeing the improvement in both from day to day, they changed completely, and the two convalescents were no longer objects of pity during the remainder of the voyage.

To be a first-class athlete one must have an excellent constitution to begin with, and on a more wholesome system of diet his life ought to be a long one. I have met with numerous cases of extreme full living where the parties had no pretensions to athleticism, and some of them, though fully occupied, took little or no exercise of any sort. Two of them came to grief from huge abscesses opening at the lower end of the sternum. Both were so very stout and loaded with fat that the source of the abscess could not be ascertained. One of them sur-

vived his first attack. He had the same irritable small red tongue as in the first case I have mentioned, he could take little or no food, and got excessively reduced in bulk. Unfortunately, as soon as he was able, he resumed his full feeding, and by and by an abscess again showed itself in the same locality. As I saw he was not to get over this attack I brought another doctor to see him. He was a great friend of the patient, who was a most genial man and was a co-elder with him in the church. On telling him what I believed to be the cause of his friend's illness he got rather angry with me, and could not believe that his friend was such a glutton as I suggested. I had his wife brought in, and asked her only one question, viz. how much butcher's meat her husband took to his dinner. The answer was, "Always three pounds." This was sufficient, and he agreed with me that the case was hopeless.

In the second case of abscess in the same

region the patient was even larger in bulk than the other. He was a medical man of a very healthy family, many members of which I knew well. I had looked after his family for many years when he was in India, and I never heard of his being ill till I got a summons to London to see him. Before I could get away I heard of his death. These were two of three huge men I have met with. The third was also a strong healthy man, but, like the others, a very full liver ; he died after much suffering from cancer in the bowel, while still also, like them, in the prime of life.

I have known in the course of a long life many much stronger and healthier men than myself, who seemed to have a much better chance than I ever had of enjoying a long and happy life, but who indulged too much in the pleasures of the table, and who died in their prime. Several of these were medical friends who laughed at my enforced meagre diet, on which I did more work than

any one of them. I have also known many whose stomach failed them in time and who soon adopted a more restricted diet, and did not resort to drugs to enable them to go on longer in the old way. Most of these, I am pleased to say, are now of a good age, and are still at work, or have given it up not from necessity but from choice. Some had been obliged to give up work when treated in the ordinary way, but on adopting a more rational mode of living found that, had they done this earlier, they might still have enjoyed the pleasures and fruits of an active life. One was a medical man with an excellent business as a specialist, who had retired about twelve months before he wrote to me, owing to serious heart troubles. These left him in great measure when he got his stomach into a less irritable condition, and he now can look on what remains of them with an easy mind. Another was a well-known artist who had got almost to the summit of his profession. He was, as many

artists are, of a highly nervous temperament, and he suffered acutely from time to time from gastric attacks, which laid him up for some days. He soon recovered his appetite, and at once returned to his ordinary diet. On reducing this both as to quantity and quality he gradually got into better health, after having been laid aside for many years, and by and by he resumed his art in a moderate degree as an amusement. I am indebted to him for a bit of work, which some of his artist friends tell me is quite equal to anything he did when at his best.

It is interesting to notice to how great an extent health may be restored after a long period of error, if only the wrong mode of living be given up, and the invalid turns to a better. Nature in this respect is not a hard master, and soon restores the erring one to a happier condition, provided that he now gives up all breaking of her laws. I have found this to hold in so many extreme cases, that I have become unwilling to give

a hopeless prognosis in almost any case whatever, unless manifestly at death's door. If health cannot possibly be restored, some prolongation of life may be granted, and certainly an easier death. This I have seen, with many other instances, in at least two cases of general paralysis, one of the most hopeless terminations of the life of a healthy man who has yielded to excess. In both instances this excess had been very moderate, and they had strong healthy constitutions to begin with. Their digestive organs did not fail them even after the signs of paralysis were well marked, and both continued to indulge their appetite beyond what was prudent, till a sudden attack of apoplexy rendered them more amenable to my urgent request that they would adopt a much stricter regime. On this both lived for many years, and retained their mental powers up till the last. One lost the use of his limbs, but was able to spend much of the good weather in his chair in the open air. The other could move

about with tolerable freedom, but he was long annoyed with a degree of paralysis of the throat, and he died suddenly when swallowing too large a morsel at table.

In concluding this paper, which has wandered somewhat from the question of athletics, I wish to impress on young and old that moderation in food and in exercise is the best rule to follow, and leads to the longest, happiest, and most useful life. As to food, this rule must be observed by the individual, as soon as he has emancipated himself from the well-meant, but often disastrous, influence of his parents, doctors, and, it may be, of his wife. To many a one, excessive exertion is a necessity, but he will do his work, whether mental or bodily or both, with greater ease and for a longer period, if he continues his moderation in diet. When he makes a breakdown he will have a much better chance of recovery from rest alone, and he may be able to resume his work. He will have now learned that for the work's

sake he must take it more leisurely in the future. This golden rule of moderation, and its reward, can nowhere be seen so simply put, and with such exquisite beauty of language, as in the few lines from Milton which appear on the title-page of some of the latest editions of *Plea for a Simpler Life*.

“ I yield it just,” said Adam, “ and submit.
But is there yet no other way, besides
These painful passages, how we may come
To death, and mix with our connatural dust ? ”

“ There is,” said Michael, “ if thou well observe
The rule of not too much, by temp’rance taught,
In what thou eat’st and drink’st, seeking from thence
Due nourishment, not gluttonous delight,
Till many years over thy head return :
So may’st thou live, till like ripe fruit thou drop
Into thy mother’s lap, or be with ease
Gather’d, not harshly pluck’d, for death mature.

Paradise Lost, Book XI.

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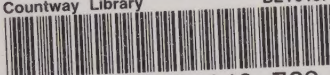
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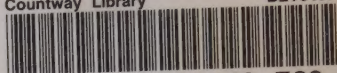
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